

# SC Ocean Planning Initiative

## August 10, 2011 – Round Table on Ocean Aquaculture

SCDHEC-Office of Ocean and Coastal Resource Management  
1362 McMillan Ave., Third Floor, Charleston SC 29405

### MEETING MINUTES

#### In Attendance (w/ contact emails):

1. Bob Bacon – Sea Grant Extension Program, [robert.bacon@scseagrant.org](mailto:robert.bacon@scseagrant.org)
2. Bob Baldwin, Low Country Seafood, [rbaldwin@tds.net](mailto:rbaldwin@tds.net)
3. Jessica Beck, Southeast Regional Coordinator – NOAA Office of Aquaculture, [Jess.Beck@noaa.gov](mailto:Jess.Beck@noaa.gov)
4. Mark Berrigan - Bureau of Aquaculture Development, Florida Div. of Agriculture and Consumer Services, [Mark.Berrigan@freshfromflorida.com](mailto:Mark.Berrigan@freshfromflorida.com)
5. Frank Blum, SC Seafood Alliance, [scarolinaseafood@knology.net](mailto:scarolinaseafood@knology.net)
6. Robert Boyles, SC DNR Marine Resources, [BoylesR@dnr.sc.gov](mailto:BoylesR@dnr.sc.gov)
7. Dan Burger, SCDHEC-OCRM Program Administration & Communication Div. [burgerdj@dhec.sc.gov](mailto:burgerdj@dhec.sc.gov)
8. Clay Chappell, Southland Fisheries Corp., [sfcfish@aol.com](mailto:sfcfish@aol.com)
9. Bill Cox, Island Fresh Seafood, Inc., [billcoxifs@cs.com](mailto:billcoxifs@cs.com)
10. Braxton Davis, SCDHEC-OCRM Policy and Planning Div., [davisbc@dhec.sc.gov](mailto:davisbc@dhec.sc.gov)
11. John Mark Dean, USC, [john.dean@earthlink.net](mailto:john.dean@earthlink.net)
12. Michael Denson, SC DNR MRRI, [densonm@dnr.sc.gov](mailto:densonm@dnr.sc.gov)
13. Rick DeVoe, SC Sea Grant, [Rick.DeVoe@scseagrant.org](mailto:Rick.DeVoe@scseagrant.org)
14. Paul Gayes, Coastal Carolina, [ptgayes@coastal.edu](mailto:ptgayes@coastal.edu)
15. Tony Geisman, Cherry Point Oyster, [capttg@bellsouth.net](mailto:capttg@bellsouth.net)
16. Wally Jenkins, SC DNR Marine Resources, [JenkinsW@dnr.sc.gov](mailto:JenkinsW@dnr.sc.gov)
17. Mike Pearson, SCDHEC Shellfish Program, [pearsodm@dhec.sc.gov](mailto:pearsodm@dhec.sc.gov)
18. Marvin Pontiff, SCDHEC-OCRM, [pontifmj@dhec.sc.gov](mailto:pontifmj@dhec.sc.gov)
19. Melissa Rada, SCDHEC-OCRM, Policy and Planning Div., [radams@dhec.sc.gov](mailto:radams@dhec.sc.gov)
20. Craig Reaves, Sea Eagle Market, [seaeaglemarket@live.com](mailto:seaeaglemarket@live.com)
21. Paul Sandifer, NOAA, [Paul.Sandifer@noaa.gov](mailto:Paul.Sandifer@noaa.gov)
22. Chad Truesdale, SCDA Aquaculture Marketing, [ctruesd@scda.sc.gov](mailto:ctruesd@scda.sc.gov)
23. Amber Von Harten, SC Sea Grant Extension Program, [AMBERVH@clemson.edu](mailto:AMBERVH@clemson.edu)
24. Elizabeth Von Kolnitz, SCDHEC-OCRM Policy and Planning Div. [vonkoleb@dhec.sc.gov](mailto:vonkoleb@dhec.sc.gov)
25. Jack Whetstone, SC Sea Grant Extension Program, [jwhstn@clemson.edu](mailto:jwhstn@clemson.edu)
26. David Whitaker, SC DNR Marine Resources, [whitakerd@dnr.sc.gov](mailto:whitakerd@dnr.sc.gov)

#### Presentations

##### SC Ocean Planning Work Group

Braxton Davis, Director, Policy and Planning Division, SCDHEC-OCRM

Braxton gave an overview of DHEC-OCRM's direct permitting authorities in the coastal Critical Areas, which include coastal waters out to the 3nm state limit offshore, as well as tidelands and beach systems. He also described coastal zone "consistency reviews" of state and federal activities and permits that occur outside of the Critical Areas and in federal waters. He pointed out the coastal zone program policies and regulations that would apply specifically to ocean aquaculture activities, and provided background information on the SC Ocean Planning Work Group and the soon to be released SC Ocean Report. All past meetings and workshops are represented on the DHEC-OCRM website:

[http://www.scdhec.gov/environment/ocrm/ocean\\_planning.htm](http://www.scdhec.gov/environment/ocrm/ocean_planning.htm). Braxton discussed some of the other

efforts underway in SC for ocean planning and policy development, including the Regulatory Task Force on Coastal Clean Energy, the Legislative Study Committee on Wind Energy Production Farms Feasibility (2009), and the Governor's South Atlantic Alliance. Braxton opened up the ocean aquaculture discussion by highlighting potential use conflicts and environmental impacts, regulatory frameworks, and the potential opportunities that should be considered for ocean aquaculture development. He also listed the goals of this Ocean Aquaculture Round Table which included: getting a sense of the potential for aquaculture development in South Carolina's ocean waters; gaining an understanding of potential use conflicts; identifying the various concerns associated with ocean aquaculture in SC (i.e. regulatory hurdles, and environmental, socioeconomic, and technological issues or opportunities); and providing the SC Ocean Planning Work Group with potential recommendations for their report.

To see this presentation, please visit: [http://www.scdhec.gov/environment/ocrm/ocean\\_planning.htm](http://www.scdhec.gov/environment/ocrm/ocean_planning.htm).

### **Overview of NOAA Marine Aquaculture Policy and Initiatives**

Dr. Jessica Beck, Southeast Regional Aquaculture Coordinator, NOAA Office of Aquaculture

Dr. Beck provided an overview of the recently released NOAA Marine Aquaculture Policy (visit: [http://aquaculture.noaa.gov/us/aq\\_policies.html](http://aquaculture.noaa.gov/us/aq_policies.html) to see the policy). She explained that the NOAA policy addresses all forms of marine aquaculture, not just to activities in federal waters. She also emphasized that the NOAA policy is not a regulatory document; rather it establishes a national framework to guide agency actions and decisions. Priorities in the NOAA policy include: making timely management decisions based on the best scientific information available; advancing sustainable aquaculture science; ensuring aquaculture decisions protect wild species and healthy coastal and ecosystem services; developing sustainable aquaculture in locations compatible with other uses; working with partners domestically and internationally; and promoting a level playing field for U.S. aquaculture businesses engaged in international trade.

Dr. Beck provided information on two initiatives related to the goals of the NOAA policy, including: 1) a 'National Shellfish Initiative' which will focus on increasing commercial production of shellfish and restore shellfish populations and habitats in order to create jobs, provide locally-produced food, and improve water quality, and 2) an 'Aquaculture Technology Transfer Initiative' which will foster innovative sustainable marine aquaculture practices that spur technology transfer to aquaculture businesses and foster job creation in coastal communities. Dr. Beck also explained that NOAA is moving forward with implementation of the Fishery Management Plan for Regulating Offshore Marine Aquaculture in the Gulf of Mexico (<http://www.gulfcouncil.org/Beta/GMFMCWeb/Aquaculture/Aquaculture%20FMP%20PEIS%20Final%202-24-09.pdf>). For details about these initiatives or questions about NOAA's Marine Aquaculture Policy, contact Dr. Beck at [Jess.Beck@noaa.gov](mailto:Jess.Beck@noaa.gov) or 727-551-5755.

### **History of Aquaculture in South Carolina**

Jack Whetstone, Marine Aquaculture Specialist, SC Sea Grant Extension Program

Mr. Whetstone described South Carolina's history of aquaculture with an overview of how the demand and techniques/methods has changed over the years. He described how the rice and lumber mill ponds in the 1800s evolved as aquaculture became more diversified - going from oyster farming to eventually including marine shrimp, clams, catfish, hybrid striped bass, and most recently types of marine finfish and gamefish. Mr. Whetstone talked about the research facilities in South Carolina, including the Waddell Mariculture Center, which is internationally known and will likely engage in ocean aquaculture research in the future. Jack discussed the status of aquaculture in SC in recent years – becoming more diverse; seeing a decline in farms inland (coastal), along with reduced government assistance. However, there has been some growth in the farming of clams and sport fish. While the future shows potential for the industry, the landscape for it is changing with more likelihood for aquaculture farming to show up on public lands and in public waters or land far inland. Shellfish is a great product because it requires little to

no feed costs (e.g. shrimp). Live products will lead to less foreign competition. If farmers can reduce their discharges, they can avoid certain regulations and permitting requirements. By developing a more intensive system, land needs can be reduced. As natural fisheries decline, aquaculture can aid with recreation and stock enhancements.

Mr. Whetstone mentioned some of the challenges for the aquaculture industry, starting with the Aquaculture Enabling Act. While its purpose was to expand aquaculture opportunities, streamline state agency permitting, and provide protection for the state's aquatic resources, the Act pertains to freshwater aquaculture only. There is no framework for marine aquaculture. With growing interest in marine aquaculture activity around the country, this is a major hindrance for the industry in SC. There is potential for a market in marine finfish (e.g. Florida – using sinking and floating cages and based on Hawaii experiences), but whether these can be permitted and are economically feasible in South Carolina are still unanswered questions. Examples in other areas of the country include raising aquatic plants (Hawaii) and experiments connecting farms to oil rigs in the Gulf of Mexico. Some cages are made for the bottom, so impacts from hurricanes are reduced. To sum up, what appear to be the major constraints for the emerging marine aquaculture industry include: lack of a regulatory framework, economic feasibility, anchoring, competing uses, insurance, and hazards/hurricanes.

To see this presentation, go to [http://www.scdhec.gov/environment/ocrm/ocean\\_planning.htm](http://www.scdhec.gov/environment/ocrm/ocean_planning.htm).

### **Regulatory Framework for Ocean Aquaculture in SC**

Rick DeVoe, Executive Director, SC Sea Grant

Mr. DeVoe discussed the range of issues and complexities involved with the marine aquaculture industry and that should be considered when developing any type of regulatory or planning framework for marine aquaculture. This industry poses potential use conflict issues, environmental and ecological concerns, as well as socio-cultural considerations. In addition, marine aquaculture would be a new use in state ocean waters; a marine-based facility would also require land and freshwater access, and there would be numerous legal and institutional considerations to think through. The existing regulatory environment both at the federal and state levels can be overwhelming to potential applicants due to the number of authorities that would be involved in the permitting process under existing laws and the lack of coordination among them. There is currently no regulatory framework or standards for federal waters and past South Carolina policy actions that occurred in the 1980s related primarily to freshwater aquaculture. While it is possible to obtain state approvals for an ocean aquaculture facility through existing laws and regulations that were not necessarily written for ocean aquaculture, the process is unclear. The permitting approval process for aquaculture in inland South Carolina as well as along the coast was mapped out in the 1980s (see flowcharts in presentation) and, except for changes in names of some state agencies due primarily to restructuring, is not much different today. An Aquaculture Permit Assistance Office was created which eased the paperwork process but really did not result in a streamlined process. The Assistance Office offers information about the number of authorities and permits needed before an aquaculture facility may be developed.

Based on significant past research, elements that should be incorporated in a policy framework dealing with marine aquaculture should include: designation of preferential areas for aquaculture, provisions to address exclusivity of use of common trust resources, property rights, regulatory coordination and streamlining, a risk "safety net," and a mechanism to address seed and feed stocks, species selection, and disease. Mr. DeVoe pointed out that the Regulatory Task Force for Coastal Clean Energy recommended consideration of a leasing framework for state waters. A leasing system would address a number of issues from both the public's and the operator's perspectives: For the public – protection of public trust rights (resources shared by all); public access to ocean areas but also exclusivity for the proposed operation; and public interest protections through performance expectations, and possibly compensation. For the operator of the proposed facility - adequate property rights to protect the investment and investor; security of ownership of facilities and equipment deployed and used (e.g., trespass, theft, vandalism); and

clarification of the nature of governmental authorization received by the operator (e.g., ownership, lease, or other form of conveyance).

To see this presentation, visit [http://www.scdhec.gov/environment/ocrm/ocean\\_planning.htm](http://www.scdhec.gov/environment/ocrm/ocean_planning.htm).

## Round Table Session

Following the presentations, Braxton opened up the round table discussion allotting a certain amount of time for discussion to address each of the four following questions. Comments, concerns, suggestions, and recommendations are captured in the notes below, but **do not necessarily represent a consensus viewpoint of meeting participants.**

### 1. What are the future prospects for open ocean aquaculture in South Carolina? (current interests / future opportunities)

- Seafood/aquaculture issues need to be brought to the forefront among the state legislature.
- The SC Aquaculture Act says “someone will help with permits” but it is not a political priority at this point. Need staff devoted to this within the Department Agriculture.
- As population growth continues, food scarcity and importance grows. Seafood is an important food source and needs to be recognized as such.
- Industry is interested in offshore ocean aquaculture – for example, offshore shellfish – but hurdles are significant. It is far too difficult to obtain a permit, which is the most significant hurdle and there is no guarantee of continuity once a permit is obtained.
- Permitting must be streamlined.
- The SC Aquaculture Act mandated that DNR/OCRM and others get together to work on this but it has not happened.
- There is tremendous potential. Marine aquaculture is practiced around the world but the main reason it is not here is due to permitting difficulty.
- The Gulf of Mexico has had a permit pending to farm Cobia since 1998. There is also interest in FL, TX, and LA.
- Need one good case study where a permit is granted - that will generate additional interest
- Other examples or relevant studies to learn from include: the use of oil platforms (CA) as sites for ocean aquaculture activities; UNH Atlantic Marine Aquaculture Center (<http://amac.unh.edu>) providing research and development for sustainable offshore aquaculture industry – parallels similar efforts in Gulf and Pacific.
- It is known that Cobia has excellent potential in South Carolina and some demonstrated success in cages
- Evaluate HR 2373 – National Sustainable Offshore Aquaculture Act – Rep. Capps
  - PURPOSES:
    - (1) To establish a regulatory system for sustainable offshore aquaculture in the United States EEZ.
    - (2) To authorize the Secretary of Commerce to determine appropriate locations for, permit, regulate, monitor, and enforce offshore aquaculture in the EEZ.
    - (3) To require the Secretary of Commerce to issue regulations for permitting of offshore aquaculture in the EEZ that prevent impacts on the marine ecosystem and fisheries or minimize such impacts to the extent they cannot be avoided.
    - (4) To establish a research program to guide the precautionary development of offshore aquaculture in the exclusive economic zone that ensures ecological sustainability and compatibility with healthy, functional ecosystems.
  - Status: 6/24/2011- Referred to House subcommittee. 7/6/2011 - Referred to the Subcommittee on Fisheries, Wildlife, Oceans, and Insular Affairs.

- Industry has been interested in finfish offshore, 3 miles or slightly beyond, and shellfish possibilities; however, risk of lawsuits (e.g. Kona Blue – Hawaii – even after obtaining permits) makes it tough to invest.
- Ocean planning – industry is concerned about limits imposed by CMSP. Siting restrictions may be too limiting... industry needs to be at the table from the beginning to weigh in on preferred siting locations.
- It was noted that similar uncertainties are felt by renewable energy development industry. All need to get together to figure out common obstacles and favorable areas. Consider the Fishermen's Energy example. Fishermen came together in mid-Atlantic and developed an energy company – synergistic opportunities need to be explored for offshore developments to cut economic margins.
- Need land-side infrastructure and support – same kind of issues across uses – service vessels and work force – identify common needs and facilities
- Potential use – aquaculture in restoration projects – different kind of market but, for example, look at shellfish aquaculture in Chesapeake Bay.
- Lack culture of seafood/product/processing and distribution system and marketing – not much value-added – need larger-scale economic development planning for this.
- We've invested significant funding in red fish – public funds stimulated industry – good case study – need to work with Department of Agriculture.

**2. What technological and environmental concerns and/or opportunities may be associated with ocean aquaculture in South Carolina?**

- Because there needs to be a water depth of at least 90-100 feet for fish nets (finfish aquaculture) and that means going 30 miles offshore.. Does that make it infeasible?
- Marine aquaculture is practiced worldwide so technology limitations are not a concern.
- Technology can be adapted to location but regulations need to allow it in the first place.
- Entanglements are going to be major issues and storm impacts can make it worse.
- The U.S. and South Carolina shouldn't just displace environmental problems to other parts of the world (by buying imports, etc...). We need to produce our own product and do it in an environmentally sustainable way.
- Fish attracting devices –some are less harmful than others.
- Need to start with a project (or pilot for research and development) and evaluate for lessons learned (impacts, economics, value, etc.)
- The potential for escapes remains a concern, and the effects on gene pool and disease transmission are issues that need to be addressed up front.
- Cases of failure are inevitable. Appropriate mechanisms need to be in place for removal of structures or infrastructure; and to prevent escapes or long-term problems such as entanglement, etc...(The business side needs to think through these issues and propose solutions up front)
- Can be benefits – improved water quality from aquatic plants...
- Court of public opinion – if concern is effluent, genetic concerns, etc. – offshore might be best siting if those are concerns...
- We have opportunities in terms of native species such as cobia

**3. What socioeconomic concerns and/or benefits may be expected (e.g. use conflicts, economics, marketing, work force development)?**

- Working waterfronts – losing more and more; loss of onshore infrastructure
- Regulatory clarity and streamlining is needed
- Need to start in state waters, and identify areas in state waters with potential for siting. The benefit of demonstrating in state waters, close to shore, will help drive federal support.

- Worry about *Vibrio* (contaminated shellfish) within the 3 mile zone. Running through onshore systems is an idea but you still have to test every lot so costs would be an issue. See research by VIMS.
- Private industry is not going to be able to bankroll an experimental project to determine the economic viability. There needs to be some government investment, e.g. NOAA Cooperative Research grant.
- Theft, vandalism, and ship strikes are possible but in some ways theft and vandalism may be reduced offshore depending on anchoring, etc.
- Facilities attract fish, so anchoring/recreational fishing could cause damage but is less of a concern farther offshore
- Initial ocean aquaculture in the U.S. has been co-located with oil rigs in the Gulf. There is also potential to co-locate with offshore wind energy structures.
  - A number of co-benefits from co-location (same service vessels, recreational opportunities, security, multiple uses in same area – artificial reefs, etc.)
- Aesthetics should be addressed and an education process needs to happen to help the public understand what this means and what it will look like
- Agriculture is a great economic multiplier – offshore aquaculture akin to this in big multiplier
- Can be an alternative livelihood for displaced fishermen – there needs to be workforce development and training
  - This has happened in other nations – with government assistance
- There needs to be a collective message for Columbia (by industry, resource managers, regulators, etc.)

#### **4. How could state planning, decision-making, and regulatory frameworks be improved to address these concerns and benefits?**

- Learn from Florida approach
  - Florida has a regulatory framework in place for marine aquaculture
  - FL has capabilities for leasing state lands out to 11.8 miles.
  - BMPs for offshore pen culture have been developed so applicants understand process
  - In the Gulf there has been some preliminary siting work done for pen culture
  - To date, there have been some proposals but applicants have felt that the process is still too burdensome.
  - A favorable aspect of the process, which is strongly encouraged, is pre-application meetings and consultations with various agencies such as: EPA, USACE, and state agencies to discuss the applications (including what is needed in the application).
  - There may be opportunities for revenue, jobs, etc. so landscape may be good for interested companies (3 or 4 companies now looking into financing)
  - To learn more about the Florida BMP and Leasing Programs, visit [www.Floridaaquaculture.com](http://www.Floridaaquaculture.com).
  - The estimated timeframe for permitting is one year given overlapping responsibilities. The time period is usually based on applicant's ability to lay out the project well – need sufficient detail for all agencies involved. Siting to reduce concerns is key.
  - The State Department of Agriculture is the primary permitting agency that includes a certification process where other agencies review/comment.
  - Contact - Mark Berrigan, Bureau Chief, Bureau of Aquaculture Development, Florida Div. of Agriculture and Consumer Services.

#### **5. Big Picture: How does this relate to new National Policy? Marine Spatial Planning? Leasing? Message to Columbia?**

- Need detailed data offshore to support siting decisions – mapping, including uses (DNR)
  - SAFMC has data and should be involved

- Highlight past projects in SC and all existing offshore aquaculture facilities in U.S.
- Need a one-stop shop for permitting.
  - The Aquaculture Permit Assistance Office was designed for this, not just to inform an applicant where s/he would need to go to for permits.
  - See Florida example.
  - Look at the existing law which already instructs agencies to do this.
- Consider a leasing framework for SC waters.
  - And that is adaptive for multiple uses.
- Need a state ocean policy?
- Impact of food services – tie into contemporary agriculture
- Support exploratory / pilot projects
  - Need government support – i.e. cooperative research projects and leverage existing funding sources.
- Cost of facilities can be as much as \$500K for net pens for Cobia, e.g., so grant programs difficult – and for investments – need proof of concept – someone has to bear risk. Again, need that first research and development type of project.
- There are world class research facilities, scientists, and a natural area that can grow anything right here in South Carolina. There is no need to re-invent wheel. This is being done everywhere else in the world but not in SC. The time is now. There are lifetimes of expertise approaching retirement - let's not start over. Look what happened to the textile industry. SC should be proactive.
- For South Carolina, it is more likely that the industry will develop from inshore to offshore, and the need is to use the expertise of commercial fishermen already doing this.